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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,698	11/25/2003	Terrance E. Janssen	315.0001 0101	6282
26813	7590	12/14/2005	EXAMINER	
MUETING, RAASCH & GEBHARDT, P.A. P.O. BOX 581415 MINNEAPOLIS, MN 55458			FORD, JOHN K	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/721,698	JANSSEN, TERRANCE E.	
	Examiner John K. Ford	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 9/27/05

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-39 is/are pending in the application.  
4a) Of the above claim(s) 10-12, 20-27, 33-35 and 37-39 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-9, 13-19, 28-32 and 36 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/20/04

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_.

Applicant's only response to the office action mailed 27 April 2005 has been to attempt to swear behind JP 2002-30717 (published 31 January 2002) published approximately ten months before applicant filed his provisional application (27 November 2002).

The declaration filed on September 27, 2005 under 37 CFR 1.131 has been considered but is ineffective to overcome the JP 2002-30717 reference.

The evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the JP 2002-30717 reference. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthaler v. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897).

In this case applicant has submitted only one Exhibit A-1 (alleged to have been prepared in December of 2001) to show conception of the claimed subject matter before the effective date of the reference (January 31, 2002). While an employee (Brian Urlaub, who could presumably corroborate the alleged facts) is mentioned on page 2 of applicant's declaration, no separate declaration is in evidence from him. Each of the claims (i.e. claims 1, 14 and 37) requires that a section of an existing conduit that is in a flooded state be replaced by at least one fluid source conduit that provides for heat exchange between the a fluid flowing through the source conduit and a fluid flowing in a closed loop.

There is no evidence that applicant conceived of claims of this scope prior January 31, 2002 (the date of JP 2002-30717). In fact, it does not appear that applicant conceived of this idea until November 29, 2002 (applicant's Exhibit B-8) when he first proposed inserting the GLX heat exchanger into municipal water mains in the state of Minnesota). There is no evidence anywhere in Exhibit A-1 that the heat exchanger is being retro-fitted into an existing water main in a flooded state. It could just as well show new construction. It could just as well show a water main that was un-flooded (i.e. only partially filled). Applicant's declaration doesn't even explain any of the disclosed elements in Exhibit A-1 and their correspondence to what is claimed in the claims. For example the GLX heat exchanger is nothing more than a highly schematic showing leaving the reader to guess at what is being shown. None of the other Exhibits B-1 through B-11 establish conception of the claimed subject matter of the independent claims prior to January 31, 2002. The general requirements of MPEP 715.07 have not been met.

Accordingly, the first office action is repeated below.

Applicant's election of Group I, claims 1-21 and 28-39, wound pipe of Figs. 1 and 3, closed system using an intermediate fluid and a heat pump is acknowledged. Claims 1-9, 13-19, 28-32 and 36 have been identified as readable on the elected species. Claims 10-12, 20-27, 33-35 and 37-39 are withdrawn from consideration at this time. Applicant's traverse is acknowledged, but not convincing as the examiner's time is extremely limited. The Examiner, with applicant's cooperation, will rejoin as many

claims as can properly depend from any allowed claims, as is applicant's understanding. The restriction/election requirement is made Final.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 3, 4, 6, 7, 8, 13, 14, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Bardenheier (USP 4,782,888) and JP 2002-30717.

Bardenheier teaches a municipal water line 16 with a heat exchanger 14 in thermal contact with the water in the municipal water main 16. The heat exchanger 14 transfers heat to a primary heat transfer liquid (water or water and propylene glycol) circulated in pipe system 11. Individual heat pumps (see col. 6, line 33) can be used to transfer heat from the primary heat transfer liquid to the secondary fluid circulated through pipes 13. This secondary fluid can be FREON (see col. 3 lines 33-40) used to provide heating or cooling to a conditioned space occupied by the user. No details of the actual construction of heat exchanger 14 are disclosed.

Figure 4 of JP '717 discloses a pre-fabricated pipe 2 having a heat exchanger 1 can be inserted into an existing (waste) water pipe 2 (see paragraphs 65 and 76 of the

translation describing the installation in Figures 4 and 7, respectively). The heat exchanger 1 transfers heat to a primary heat transfer fluid circulated in pipe 17, which forms a closed circuit. A reversible heat pump 11 provides heating or cooling to load equipment 20.

To have used the pre-fabricated pipe section 2 with heat exchanger tube 1 of JP'717 in place of schematically shown heat exchanger 14 of Bardenheier would have been obvious to avoid the problems disclosed in JP '717, paragraph 6 and 7, incorporated here by reference, and to ease construction as disclosed in JP '717, paragraph 8.

Alternatively, to have used the apparatus of JP 2002-30717 to recover heat from a municipal water supply rather than a waste water source would have been obvious in view of the fact that Bardenheier discloses municipal water "provides an outstanding source or sink of low grade thermal energy" for reasons stated in col. 4, lines 16-36 of Bardenheier, incorporated here by reference. That is, the prefabricated pipe section 2 of JP '717 would have been simply inserted into a new construction or an existing water main, rather than into a new construction or an existing waste water pipe. The water main installation would obviously require increased provisions to prevent contamination of the potable water in the event of a pipe breach, which is probably why most patents in this field prefer wastewater, however, there are clear reasons taught by Bardenheier for why potable water from the mains might be preferable.

Regarding the claimed monitoring equipment, see element 18 of Bardenheier and regarding the claimed “enclosing” structure see heat insulator 3 and protective cover 4 of JP '717.

Claims 5, 16, 28-31 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 4 and 15 above, and further in view of Fr 2381869 and Sherman.

Fr '869 teaches an enclosure 1 for a water main 5 and a sewer pipe 6 that are essentially of identical construction. A cover 2 is shown that clips into place. To have used such an enclosure to enclose the water main of the prior art would have been obvious to permit easy access for inspection or repair and likewise to have locked it to prevent unauthorized access would have been obvious in view of Sherman.

Claims 9, 19 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 1, 14 and 28 above, and further in view of Clancy (USP 2,364,130) or JP 88730 (Fig. 3) or JP 9-229574 (Figs. 3-5).

Clancy disclosed a coil 30 of a somewhat flattened cross-section (col. 3, lines 38-42, “so as to increase the area of contact with the sleeve”) that it is helically wound around. Essentially the same disclose is found in the referenced figures in the two Japanese publications. To have flattened the cross-section of the heat exchanger

Art Unit: 3753

tubing wound around the water pipe as shown in the prior art (JP '717) to increase the contact area and, hence, the heat transfer would have been obvious to one of ordinary skill in the art, in view of these three separate teachings of the same.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to John Ford at telephone number (571) 272-4911.

Ford

12092005



John K. Ford  
Primary Examiner